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THE BRITISH SYSTEM OF IMPROVING AND ADMINISTERING PORTS AND TERMINAL FACILITIES

European countries present a wide range of experience in the management and ownership of ports and harbors. England alone has many varieties, differing in nearly all cases from those most in vogue on the Continent. Germany is a country with a highly organized and successful governmental activity for fostering trade. The present striking success of these efforts is calling the attention of other nations to what Germany is doing, but it is true that England has been for more than a century the prominent figure in the commercial world, and that, too, without the thorough and formal organization of Germany. British freedom of trade has had a deeper meaning than the mere question of tariffs. The German governments act. The British government has only guided and controlled the action of individuals.

These different policies are in part explained by the differing history of the two nations. For nearly ten centuries England has been united, unconquered and practically unthreatened by a foreign foe. During the whole of this period she has had more internal freedom in her political and economic life than any country of Europe except Holland. For two centuries England and Scotland have been united with freedom of trade and almost continuous internal peace. British wars have been fought abroad. During this same period the continent of Europe has, decade after decade, been devastated by war from end to end, and the British manufacturers and traders have profited by the disturbance and have been allowed to develop their industries naturally.

The continental manufacturer has been harassed more by tariffs than by wars. Germany in 1818 with sixty or more tariff-levying divisions with independent and varying fiscal policies was an impossible place for import, export or the assembling of raw material. Dynastic, military and political disturbances strengthened the hand of centralization and fettered individual liberty and initiative. The raw materials of the Continent, especially of Germany, were scattered and must needs await the coming of the railway and the steamer. Principalities, wars and tyrants dammed up the stream

of German progress until that country with its increasing population was a disconnected mass of prostrate possibilities needing only the touch of opportunity to move forward with exceptional rapidity. That opportunity has come with the latter part of the 19th century at the hands of a government that had tasted the bitterness of defeat and had realized and acted upon the idea that national power was desirable and only to be attained by the raising of the efficiency of every individual and of every industry. After the German humiliation at Jena, Prussia began consciously and deliberately to educate that she might have efficiency and through efficiency, power. This policy was vindicated in 1870 when it was said that the German schoolmaster won at Sedan. It might also be said that he is now winning in the foreign market. The policy that began by educating the German peasant in 1820 has broken down Germany's internal tariffs, has made the leading technical and commercial schools of the world, and through state activity, has produced the Prussian state railway system with its preferential and export rates; has put the export bounty on sugar, the bounties on shipbuilding; has sent subsidized steamships to the far Indies and has made Hamburg the most efficient port in the world.

England has had a more even, a more natural and latterly a less systematic development of commerce and its necessary facilities. Her raw materials, especially of coal and iron, and her water power have been abundant and favorably located. Internal freedom of trade and internal peace have left her people free to develop industry and trade. Her insular position has removed her from danger of foreign aggression so that the force of tyranny has declined and the individuals or the associations of individuals have been free to act as occasion demanded, and they have met commercial wants as they arose. Not being hampered like Germany, Britain's wants have not accumulated until a comprehensive system was demanded. These wants having been satisfied as they manifested themselves, we find that instead of a comprehensive system Britain has a complex accretion, the result of slow and gradual growth and chiefly by individual initiative. Such is the system of operating commercial facilities, such is the British school system, the British Constitution and the genius of British civilization.

The British system has its advantages and its drawbacks.

It was early in the field, but it is necessarily incomplete, and when the time arrives for more systematic improvements the private interests that first met the demand are often conservative resisters of progress with vested interests demanding protection. This becomes more noticeable as the scale of modern commerce increases and demands facilities of a magnitude that the individual finds it impossible to supply. The British system is now at many points beginning to show itself inadequate to meet the demands of 20th century commerce and the more systematic competition of Germany. Many symptoms show that the United Kingdom feels the competition of Germany and the United States and is attempting to meet it by a more thorough organization. The Chamberlain tariff agitation is an effort to protect England from her rivals. She has felt the need of a comprehensive educational system, but the passage of a satisfactory education act is hampered by conflict with the very numerous private schools—an outgrown result of private initiative. In this respect England is far behind Germany. Humiliated Germany has spent a century in education and technical training and equipment. The United Kingdom, the unquestioned and unthreatened victor of the Napoleonic wars, mistress of the seas secure in her isles, has spent that century in strife between the aristocratic and democratic classes who have fought within the political arena concerning the right to vote and govern. The British nation has now reached the point where it must repeat and is repeating the history of Germany. Great Britain feels her weakness and strives to improve her weak points. Individual efficiency must and will be raised by an improved educational system. The tariff may or may not be changed, but it will be improved if possible; shipping has been protected and aided by increased subsidies, and the tendency to betterment in the control and organization of commercial facilities is suggested by the recent agitation for bettering the port of London where it is proposed to make vast improvements and transfer control from several private bodies to a central authority.

The original repository of power of general control over ports in Great Britain was the municipality but the fact that the municipality rarely cared to make extensive improvements in its corporate capacity left the field open to private activity. The size of the operations necessary for harbor improvements and the uncertainty

of profitable return were such that individuals and partnerships were usually deterred from venturing into this field which was left for the joint stock company, the corporation. But corporations in great Britain are creatures of Parliament. So from the earliest harbor improvements to the present day there has been a constant succession of acts of Parliament creating bodies, private, semi-public and public for the improvement, operation and control of docks and other port facilities.

The first stage in this progress was the dock company, pure and simple. The rise and fall of the tide on British coasts is so great that vessels must anchor far from shore or lie on the bottom at low tide. This made slight difference in the days of light trade and of that carried by shallows and small sailing vessels. With the early years of the 19th century came heavier commerce and larger vessels which needed the shelter of enclosed docks with water constantly at high tide level.

The first half of the 19th century was the era of the dock companies. They were organized in all the leading ports and usually prospered upon the charges made upon vessels and goods entering their premises. But this prosperity was not to last. The middle of the 19th century witnessed three changes in commerce, each in itself revolutionary. (1) The railway gave the whole of Great Britain access to the sea. (2) The steamship made equal improvements in the accessibility of foreign lands and products. Furthermore the steamship was shortly made of iron and greatly enlarged. (3) The coming of the free trade era caused a great increase in the imports of bulky commodities.

The increased commerce and the larger ships made obsolete the docks of the old sailing ship days. The improvements necessary to accommodate the larger type of vessel were so expensive that the dock companies were with few exceptions unable to comply with the demands of trade and their decline set in. Except in favored ports the time had passed when a dock company could from its dues derive sufficient revenue to pay expensive salaries, interest charges and dividends on its stock. Henceforth the dock company had to be reorganized on a non-profit basis or become a part of some larger system in which it was an integral part.

Numerous reorganizations followed, resulting in many varieties

of port arrangements, but all fall under one of three distinct types which will be taken up in the order named:

I. Public trust, in which the idea of corporate profit is abandoned in the interests of public welfare.

II. Municipal ownership and operation as a public utility, not as a source of revenue.

III. Private ownership and control, usually by a railway company as a part of an extensive system.

I. *The Public Trust.*

The public trust is the most typical of all the forms and by the compromise methods of its organization offers an excellent example of the British way of doing things. The public trust is a business corporation, organized like any other corporation, by Act of Parliament. Membership upon the board of directors is an honor but without financial reward in any way. In these respects and in the attitude towards the public the British harbor trust closely resembles the board of trustees of an American university. In the distribution of the powers of appointing directors we see the element of compromise that led to their origin. When the increased commerce of the free trade era had brought conditions to a standstill various official and non-official organizations had usually been exerting more or less power and the common method was for the Act of Parliament to give these and possibly others representation in the board of a new and more comprehensive governing body, the non-profit, the non-salary-paying corporation, or public trust.

For the City of Glasgow the Clyde Navigation Trust was constituted by an Act of Parliament in 1858.

It consists of twenty-five members as follows: The Lord Provost of Glasgow, *ex officio*, chairman; nine town counselors of Glasgow; two nominees of the Chamber of Commerce; two nominees of the Merchants House; two nominees of the Trade House; nine persons elected by the shipowners and harbor rate payers. An Act was introduced in 1901 to reduce the municipal representation in this board.

Liverpool is unique in having no municipal representatives whatever upon the board of its harbor trust.

The Thames Conservancy Board has control of the Port of Lon-

don, the navigation improvements of the Thames from the deep sea to and above London and also controls the waters of the Thames and its entire drainage basin with certain small exceptions. By the revision of 1894, this board has thirty-eight members appointed or elected as follows: Appointed by the Admiralty, two; by the Board of Trade, two; by the Trinity House, two; by the Gloucestershire and Wiltshire County Councils, one; by the Oxfordshire County Council, one; by the Berkshire County Council, one; by the Buckingham County Council, one; by the Hertfordshire County Council, one; by the Surrey County Council, one; by the Middlesex County Council, one; by the London County Council, six; by the Common Council, six; by the Essex County Council, one; by the Kent County Council, one; by the Metropolitan Water Companies, one; by the Oxford City and County Borough, one; by the County Borough of Reading, one; by the County Borough of West Ham, one. Elected: By shipowners, three; by owners of sailing barges, lighters and steam tugs, two; by dock owners, one; by wharfingers, one. The board divides itself into an Upper River Committee consisting mainly of representatives of the counties bordering on the Upper River and a Lower River Committee consisting almost entirely of Lower River representatives.

The Liverpool harbor authority is the Mersey Docks and Harbor Board, created by Act of 1857. Of the twenty-eight members four are nominated by the Conservancy Commission of the River Mersey, *i. e.*, The First Lord of the Admiralty, the President of the Board of Trade, and the Chancellor of the Duchy of Lancaster. The remaining twenty-four members of the board are elected by the persons who have paid not less than £10 in dock rates during any year. In practice this results in combinations so that the members really represent the commercial and mercantile organizations of the port, as the Steamship Owners' Association, the General Brokers' Association, the Cotton Association, the Corn Association, etc., thus practically duplicating in part the Glasgow method.

The public trust, being the most highly organized of British harbor types and handling effectively the commerce of her larger ports merits a presentation of its (a) advantages, (b) its operations and (c) its historical development.

(a) Its great advantage in management is the directness of control, the direct connection between the causes at interest and

the power to remedy. If the harbor of a particular port were under the national legislature, Parliament, harbor questions would be dealt with by a bureaucracy or by new legislation which would have to struggle for attention against all kinds of national, colonial and international questions. Even under the care of the municipality the harbor question would have to be passed upon by people whose only interest might be in municipal sanitation, transportation, education or other problems of city life. The harbor trust and especially that of Liverpool avoids all of these entanglements by placing the harbor in the hands of a select board representing only the people who are interested in the port. The interests and the power of remedy are united and as all rules are and must be general, favoritism is impossible and the whole population of the city is benefited by anything which aids and improves the commerce of the port.

(b) The effectiveness of the harbor trusts is proved by the success of their work. Since 1858 the Clyde, a narrow and rocky stream has been made by the expenditure of \$35,000,000 into a safe waterway and ocean steamers now lie in the stream where it was then fordable. Glasgow has been raised from comparative insignificance to the rank of a great port.

Liverpool has had an equally satisfactory experience. By Acts of Parliament of 1857-58 the Mersey Docks and Harbor Board took over the consolidated authority over the river and port and all the docks on both sides of the river. These improvements had been begun in 1709, and later, by private companies which had got into financial difficulties and sold out to the city of Liverpool in 1855, three years before the transfer to the board. The financial security based upon these properties and powers was excellent and the borrowing powers of the new management were good. Interest payments at low rates replaced the necessity of paying good dividends and operating expenses were lightened by a board whose members served without pay.

Heavy borrowings and extensive harbor improvements and enlargements were immediately made and there have from first to last been over two hundred million dollars expended upon the port. Between 1857 and 1901, the present board made capital expenditures of nineteen and one-third million pounds sterling under its borrowing powers and two and one-fifth million pounds sterling from

revenue. For the decade 1891-1901 the annual expenditure for dredging was £125,000. Along with all of these expenditures and heavy debts the financial condition of the port is satisfactory and reductions have been made in dues on both ships and goods. At the same time new docks are being dug and the facilities of the port are being steadily improved, enlarged and kept abreast of latest requirements.

In addition to docks the board owns warehouses for the storage of all kinds of merchandise and especially constructed warehouses for the storing and ventilating of grain. There are also privately owned warehouses in the city which compete with these, but there are no private docks; docks are a monopoly in control of the board.

The revenues are raised by tonnage dues on ships entering the harbor, by dues on ships entering the docks and dues at prescribed rates on the goods carried by the ships, provided it is not transshipment cargo. The finances are managed with the double object of making the port facilities of Liverpool thoroughly efficient and as cheap as possible. In the former it is succeeding. The port is magnificently equipped and complaints are rare. Surplus revenues lead to reduction in dues.

(c) The historical development, the natural history, of a public harbor trust can be best studied in London where for the past five years the dissatisfaction with the old private companies has been ripening into activity looking to the establishment of a public trust. At the present time, London, the commercial metropolis of the world's greatest commercial nation, still depends upon a port dominated by the old private interests of the type that perished in most of the other ports of Britain nearly half a century since. True the control is moribund and must be superseded by a more comprehensive authority. The private companies of London have survived longer than those of Liverpool or Glasgow or Southampton because they had a great commerce to spur them to great developments before the free trade era and to give them an impetus that has carried them on with declining energy to the present time, when they lie powerless to cope with present demands. The high value per ton of London commerce has probably enabled it to bear burdens that would have been unbearable elsewhere. The commerce of the port has been suffering for some years because of inadequate facilities, high charges, and delays in handling of freight. These

troubles arise partly from conflicts of authority between the various private bodies active within the port. Of these there are no less than four:

(a) The Trinity House, controlling pilots and the marking of channels by buoys.

(b) Thames Conservancy, having charge of the river and channel and improvements therein.

(c) The Dock Companies, owning the docks and charging for the use of the same.

(d) The Watermen's Company, having practically a monopoly of and control over the lighters and river boats.

(a) The Trinity House is derived from an ancient guild or fraternity of pilots and seamen located at Deptford Strand in Kent. It began by having certain duties in the Government Navy Yard at Deptford, but it is now confined to lighting, buoying and pilotage. This Trinity House is the general lighthouse authority for England and Wales, and Gibraltar, but its jurisdiction does not extend to many ports, having been removed by the various port Acts of the 19th century. It does the buoying, lighting and pilotage in the Thames and examines London dock masters as well as pilots.

This body is a closed corporation, being composed of "Elder Brethren" and "Younger Brethren." The Elder Brethren have sole control, filling their own vacancies by election from the Younger Brethren and recruiting the Younger Brethren by election from the outside.

In the hands of this closed corporation of private individuals the British Government leaves a considerable share of its commercial authority and the expenditure of some special revenues raised by light dues on shipping. Such are the methods of individualistic and unsystematic Britain. Complaints are not numerous, although there is danger from lack of co-operation between the Trinity House, the channel marking body, and the Thames Conservancy.

(b) The Thames Conservancy is the channel deepening body. This board is a creation of the same Parliament (1857) that enacted the Liverpool and Glasgow Harbor Acts and its activity has been one of the conditions necessary to the long survival of the private dock companies of the port. The Conservancy Board has entire charge of the tidal waters of the Thames, including the deepening of the channels, the regulation of vessels within the port, the licensing

of docks, piers and embankments, etc., and making necessary by-laws and regulations for the control of the river.

The revenues are raised by slight tonnage dues upon all vessels entering and leaving the port.

In addition to the danger from lack of co-operation with the Trinity House, the Conservancy Board, while affording relief in 1857 when it was created, is now financially unable to provide further necessary channel improvements and the traffic cannot stand an increase of tonnage dues.

(c) The dock companies have come to a similar standstill after an experience of a century. In 1800 the harbor was insufferably congested. For two centuries the customs regulations had permitted goods to be landed only on certain "legal quays" and "sufferance wharves." Cargoes were often stored on lighters for weeks awaiting turn at these favored wharves. In 1800 the West India Dock Company was authorized and was soon followed by two more. Each was given a monopoly of ships in certain trades for twenty-one years and the privilege of building and operating bonded warehouses. The companies derived their revenues from dues on ships entering the docks, from goods discharged on their quays and from the rental of warehouses. This injured the owners of "legal quays," "sufferance wharves," the lighters and others who had to be compensated by the new companies to the extent of about a million pounds sterling. The dock companies were also compelled to admit lighters to the docks to take goods from the vessels free of charge. This last privilege is called the "free water clause" and has been a part of all subsequent dock legislation and the subject of much dispute.

The great profits of the early dock companies were from their warehouses, the want of which had been the compelling motive to the building of docks. Consequently the rates on shipping were put low. The expiration of the monopolies and the refusal of Parliament to renew them was followed by a rush to build docks. Bonded warehouses were also built outside of the dock premises and the competition of the new docks and new warehouses was greatly increased by the coming of free trade and the consequent decline in the bonded warehouse business. Parliament, however, refused in 1855 to pass the bill to repeal the free water clause as the companies were still doing a profitable business, but from this time

forward their prosperity declined. Severe rate wars ensued, their finances were impaired and as the result of several consolidations, there were but two strong competing companies in 1880. In the struggle for trade each increased its debt, built fine new docks and cut rates until they came to an agreement in 1888 and were consolidated in 1900, but with hopeless finances, dividends having been nominal or entirely absent for several successive years. The capital involved was about eight million pounds in bonds and eleven million in capital stock. While unsatisfactory to the stockholders, the dock company is also unsatisfactory to the patrons and to the community at large. The free water clause gives the lighters entrance to the dock and mechanical improvements have made the lighter a large and efficient craft depending upon steam power, and used so much "that the docks in London themselves are in great measure only stations at which goods arrive from the sea to be immediately placed upon barges to be conveyed to wharves or piers at other parts of the river or to shipping lying therein."¹ It is estimated that over 75 per cent. of the freight is so handled,² and to the great detriment of the dock company's revenues.

The impossibility of sorting import goods on the deck of the ship preparatory to putting them over to the lighters has led to the larger steamship lines making arrangements to do this sorting on the quays and then transfer goods to lighters without paying dock dues. These constructive "overside conditions" have led to great confusion and delay. While a large ship lies alongside a quay the lighters cannot reach the quay and sometimes the ship is immediately replaced by another when it goes away so that two or even three cargoes may be piled in confusion upon one quay while the owners of the goods are losing time and paying demurrage on lighters that cannot get at the goods they have been engaged to carry. It is sometimes cheaper to pay warehouse dues and railroad freight than to wait and take cargo off the quay into the importer's own lighter.

This condition is unsatisfactory to the dock companies because they lose revenue and to the importer, the lighter owner and private warehousemen because they are delayed and thereby lose money. None of the suffering parties can apply a remedy.

The efforts of the dock companies to secure legal permission

¹ Report on the Port of London, 1902, p. 30.

² *Ibid.*, p. 78.

to tax the lighters has been successfully opposed by the wharf, lighter and outside warehouse interests and the London Chamber of Commerce.

(d) The situation in the port of London is further complicated by the Watermen's Company, the modern form of a 16th century guild, whose members obtained their membership through apprenticeship and had the monopoly of running boats upon the Thames in London limits. In its inception it was a regulation of rowboats in the interests of personal safety. By Act of 1894 the time of service before receiving license to run a boat on the Thames was reduced to two years, but it includes the river steamers as well as the freight boat, nearly 12,000 craft in all. The strike of 1900 showed that the Watermen's monopoly may be oppressive in a port where the lighter is such a vital factor in the daily work of handling freight.

Under the combined guidance of the four governing bodies and the conflicting private interests, the port of London has, by the year 1904, reached a condition of standstill where further progress is impossible. The Thames Conservancy cannot deepen the channel, the dock companies cannot build new docks or deepen old ones and the Trinity House and the Watermen's Company conflict with both. The deadlock will, in all probability, be broken by the action of Parliament, based upon the advice of a Royal Commission, which, after two years of investigation, has recommended a public trust, which shall take over the property of the dock companies and the privileges and authorities of the Trinity House, the Watermen's Company and the Thames Conservancy insofar as they pertain to the Thames and the port of London. This new and unified authority if established as recommended would immediately expend for channel and dock improvements seven million pounds, of which four and one-half million will be borrowed and two and one-half million pounds donated by the London County Council. The National Exchequer has no share in this stupendous transaction, which will represent nearly as much money as the projected Panama Canal. The revenues will be derived from tonnage dues on ships entering the port, dock dues on ships using docks, freight dues on all goods landed in the port and from license fees on lighters.

The composition of the board of directors of this new port authority as proposed by the Royal Commissioners is as follows:

"On the assumption that the London County Council and the City Corporation accept the financial responsibilities . . . mentioned above . . . the nominated members should be appointed by the following bodies:

(a) By the London County Council	11	members
(b) By the City Corporation	3	"
(c) By the Admiralty	1	"
(d) By the Board of Trade	1	"
(e) By the Trinity House	1	"
(f) By the Kent County Council	1	"
(g) By the Essex County Council	1	"
(h) By the London Chamber of Commerce	2	"
(i) By the Governors of the Bank of England from among persons belonging to the mercantile community of London	5	"

The elected members should be elected by different groups of voters, viz:

(j) By the oversea (or ocean) trading ship-owners	5	members
(k) By the short-sea trading shipowners	2	"
(l) By the wharfingers and owners of private warehouses on the river	3	"
(m) By owners of lighters, barges and river craft, including river passenger steamers	2	"
(n) By railway companies connecting with the docks	2	"

The electing persons, firms or companies, should be given a number of votes varying according to the amounts paid in dues upon goods, or upon shipping as the case may be."

If this measure can survive the unexpected opposition of the London County Council, the port of London will have completed its evolution and reached the condition of the greater British ports.

This detailed account of the conditions leading up to this end may be taken as an example, rather complex because of its size, but none the less a typical example, of the difficulties through which British ports have been passing in the effort to accommodate themselves to the growing demands of modern commerce.

II. Municipal Ports.

In the early days of the breakdown of the private dock companies, the municipalities frequently undertook the management of their harbors. Usually this effort proved unsatisfactory and Bristol is now the only one of the large ports that is conducted directly and entirely by the Municipal Council, several others, including Liverpool, having sought Parliamentary approval for public trusts after an unsatisfactory municipal venture. Two minor ports, Preston and Boston, have municipal ports and the Manchester city government has taken an active part in the affairs of the port of Manchester.

The Bristol docks were begun by a private company in 1803. Continuous financial difficulties led to sale to the city in 1848. In 1877 and 1881 two private companies opened rival docks further down the River Severn at Avonmouth and Portishead. Desperate competition ensued between the new docks and the municipal docks of Bristol with the result that the city, in self-defense bought out the two private companies in 1884 at less than cost and has since operated their plant as a part of the municipal system. The direct management is in charge of a committee of Councils, who employ a general manager who is responsible for the conduct of the property. The result is satisfactory. The arrangement of docks, quays, railway tracks, freight sheds, freight handling machinery serves to make Bristol an efficient port for the handling of freight and one of the leading importing ports for the kingdom. The people are satisfied with their port.

In the words of the Bristol Docks Committee: "The policy of taking over the whole of the docks by the citizens has proved an exceedingly wise one, the foreign trade, population and wealth of the city having enormously increased and the works having been maintained in a high state of efficiency, generally out of surplus revenue earned by the docks!

"The principle aimed at is not so much to make a profit as to increase the volume of traffic by keeping the tariff of charges low and providing from time to time (largely out of revenue), such further sheds, cranes, quays, railways, telephones, etc., and other facilities as the ever-changing type of traffic and vessels in which it is conducted seem to call for." They further proceed to contrast their management with that of private companies as follows: "Private

owners, seeking only to work the docks for dividends, naturally maintain a high scale of charges which is against the traders' interest. They also hesitate to expend further capital until they are actually forced to do so either by a threatened loss of traffic, or an inability to accommodate the ordinary vessel plying at the time in the different trades."

In comparing their port with those controlled by private companies the Bristol authorities lay much stress upon the fact that the rates are absolutely the same to all parties and that there are no rebates whatever. The municipality has the great financial advantage of being able to borrow its cash capital at about 2 per cent., and, with no dividends to pay, the rates of service can be low.

At Preston and Boston, the only other fully municipal ports the experience has not been so satisfactory. In both cases the towns had no harbors and the payment of high railway freights drove the people to dock building to control the freight rates. In this they were highly successful. The dues from the ports have not, however, as yet been sufficient to meet interest charges and the deficit is made up from the city taxes, but the burden is cheerfully borne. The business interests of both communities are agreed that the reduction of transportation costs, the cheapening of necessities and raw material, has stimulated trade and industry to such a degree that, upon the whole, the costly docks have paid.

Manchester, while not possessing a strictly municipal port has shared in an experience somewhat akin to that of Preston and Boston. In 1882 the people of Manchester resolved to free themselves from the necessity of conducting all import and export business through Liverpool where the port charges had to be added to a railway rate that was considered too high. The relief was to come through the Manchester ship canal undertaken by a private company who set out to make Manchester accessible to ocean vessels and receive their reward in tolls. Unforeseen difficulties doubled the cost of the undertaking, the city had to come to the assistance of the company with a first and second loan, contributing about five of the fourteen million pounds sterling. Upon the granting of the first loan the city received representation in the company and with the second loan the representation became control.

The revenues of the canal have been disappointing. The city has had to meet the interest on its stock by taxes and the private

stockholders have had little return on their investment. It is generally considered that the commerce of the place has greatly improved. The coming of ocean ships to the heart of the city has been a great aid and the opening of the canal in 1894 was immediately followed by sweeping reductions in railway freight rates. It was estimated in the first two and a half years after opening the direct saving in tolls and freight rates for the district amounted to ten million dollars. It should be remembered, however, that this saving was to the community at large and did not take the form of returns on the capital invested.

III. Private Ports.

The most important class of private ports is that dominated by the railroad companies. The coming of railways coincided with and helped to produce a great boom in all branches of commerce necessitating the reorganization of port administration and equipment. All ports that were of first importance at the time of the coming of the railroad, except London, were thus reorganized under public or semi-public control. No private enterprise could cope with the situation in a port with a large and well-established trade. At the same time there were many small, often local, ports with commerce too insignificant to warrant the building of first-class docks and harbors under the then existing conditions, and had such been desirable, they could not have been built by the weak communities that would have used the improvements. Such ports, however, offered the rapidly extending railways an opportunity to secure their coveted terminal facilities and port connections by building the same in places where land was cheap and possibilities of port development seemed propitious. So it was that the railway companies became the creators of ports or the improvers of ports, in places where the population and commerce did not warrant any other method.

Southampton is probably the most conspicuous port in the class and the list includes Cardiff, Hull, Harwich, Grimsby and many minor ports throughout the kingdom.

The history of Grimsby is a good example of the progress and development of a railway port. It is particularly good because it shows how a railway may create both a port and a city. In 1801 this port was first improved by the opening of a dock by a private

company. Later it was sold to the Manchester, Sheffield & Lincolnshire Railway. This line, running east and west through the industrial districts of Central England, desired an outlet to the North Sea and between 1846 and 1852 they built a new dock, the Royal Dock, capable of admitting the largest war vessels. From that time to the present this railway company and its successor, the Great Central Railway Company, have improved and extended the docks which are the port of Grimsby and now have a water area of 103½ acres with great extensions in view. The convenience and efficiency of these docks are of the very best.

It may fairly be said that the railway with its harbor has made the town. Five years before the railroad dock was begun, the town had less than 4000 population, sixty years later, fifteen times as many. Similar increase occurred in shipments of coal and fish and in imports of timber and the entrances and clearances in the foreign trade have grown nearly tenfold and now exceed those of Galveston, Texas.

This railway company has not been content to act purely as a harbor maker, waiting for others to create trade. The harbor, like so much new trackage, was built to secure traffic. In 1864 Parliamentary permission was obtained to run steamers to numerous continental ports between Antwerp, Stockholm and St. Petersburg, a large steamship company was bought out and direct service by the company began in 1865. This service has been frequently improved and extended. In 1891 daily sailings to Hamburg were inaugurated. In 1889 a further Parliamentary grant authorized connections to be established with practically all ports in Scandinavia and the Continent east of Ghent.

While the railway company uses its docks as the terminus for its own steamship lines there is no monopoly and it is a harbor in the true sense and open upon payment of dues to ships of all companies and nations alike. The company built it as a terminus, but it is managed toward the public like any other public or private dock company, as for example, the London docks or the Liverpool docks. As at all British ports the dues charged are under parliamentary limitations.

The experience of this railway company with the fishing industry is a typical and successful example of the relation of the docks to the prosperity of the railway. By catering in all possible ways to the

North Sea Fisheries and the requirements of the fishing boats,³ the company has been able to increase its tonnage dues at the docks through the entrance of fishing boats and then to secure in the fish shipments a lucrative freight business for the railway. Incidentally, population has thronged to Grimsby to carry on this work and the railway profits by the freight traffic of the city.

The history of Southampton and other railway ports might be rehearsed at length, but few new principles would appear. It would be but a repetition of the Grimsby experience with variation in details.

The tendency in British port ownership seems to be toward private ownership and in the form of railway termini. The docks of London will probably be transferred to a public trust and there may be occasional repetitions of this movement and occasional examples of municipalization; but the great ports are firmly fixed and the greater number of changes within the past thirty years have been toward the building of railway ports in the smaller cities. The British railways are consolidated into a few strong companies and the building of a dock as a part and feeder of a great system is a natural step in its development. There is a tendency in commerce at the present time toward the building up of numerous smaller ports both for the foreign and the domestic trade. Few of these places will reach importance without the railways provide the facilities. They are of the size that the railways have taken hold of in the past and the railway will usually feel the need of docks and build them before the municipality or a public trust would think of undertaking it. Such, at least has been the case in the recent past and there appears to be no reason to anticipate a change in the near future.

J. RUSSELL SMITH.

University of Pennsylvania, Philadelphia.

³ Special fish docks were built, enterable at all times of the tide, with graving docks, floating dry docks, hydraulic coal hoists to put coal directly into fishing steamers and an artificial ice plant alongside the quay.